

REMARKS

The Office Action dated January 30, 2004 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 18 and 27 have been amended to correct typographical errors. New claims 28-30 are submitted. No new matter has been added, and no new issues are raised that require further consideration and/or search. Further, claims 18 and 27 have not been amended to overcome a prior art rejection, and, therefore, the claims are entitled to their full range of equivalents. Thus, claims 1-30 are pending in the present application, and are respectfully submitted for consideration.

As a preliminary matter, the Office Action indicated that claims 2-4, 11-13 and 20-22 contained allowable subject matter, and would be allowable if amended to be in independent form. The applicants wish to thank the Examiner for the finding of allowable subject matter. The Office Action also notes that the drawings are acceptable.

Claims 1, 10 and 19 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,229,821 (Bharucha et al.) in view of "RTP": A Transport Protocol for Real-Time Applications" (Schulzrinne et al.). The Office Action took the position that Bharucha disclosed all of the elements of the claimed invention except "adding padding to mini-packets when the mini-packets are encrypted to insure each mini-packet is an integral multiple of a pre-determined block size." Schulzrinne was cited as curing the deficiencies in Bharucha, and the Office Action took the position

that it would have been obvious to a person of ordinary skill in the art to combine Bharucha and Schulzrinne to yield the claimed invention. Applicants respectfully submit that the presently pending claims recite subject matter that is neither disclosed nor suggested by the cited references.

Claim 1, upon which claims 2-9 and 28 are dependent, recites a mini-packet protocol. The mini-packet protocol comprises assembling mini-packets into a payload wherein each mini-packet includes an associated mini-header for insuring proper processing of each mini-packet. The mini-packet protocol also includes adding padding to mini-packets where the mini-packets are encrypted to insure each mini-packet is an integral multiple of a predetermined block size.

Claim 10, upon which claims 11-18 and 29 are dependent, recites a mini-packet controller. The mini-packet controller comprises a disassembler for receiving a payload, the payload including a plurality of mini-packets. The disassembler dismantles the payload into individual mini-packets. The mini-packet controller also includes a controller and signaling module, coupled to the disassembler, for processing the individual mini-packets with the controller further assembling the individual mini-packets into a payload. Each mini-packet includes an associated mini-header for insuring prompt processing of each mini-packet and adding padding to mini-packets when the mini-packets are encrypted to insure each mini-packet is an integral multiple of a predetermined block size. The mini-packet controller also includes an assembler for combining mini-packets into a new payload for transmission via an output port.

Claim 19, upon which claims 20-27 and 30 are dependent, recites an article of manufacture comprising a computer readable medium having instructions for causing a computer to perform a method. The method includes assembling mini-packets into a payload where each mini-packet includes an associated mini-header for ensuring proper processing of each mini-packet. The method also includes adding padding to mini-packets when the mini-packets are encrypted to ensure each mini-packet is an integral multiple of a predetermined block size.

As discussed in the present specification, the present invention enables the performing of padding, encryption and authentication at the mini-packet level. Different encryption schemes may be applied to different mini-packets. Encryption and authentication of a mini-packet is provided in a multiplexed real-time protocol payload. It is respectfully submitted that the prior art of Bharucha and Schulzrinne, individually or when combined, fails to disclose or suggest the elements of any of the presently pending claims. Therefore, the prior art fails to provide the critical and unobvious advantages discussed above.

Bharucha relates to a serial data transmission of variable length mini-packets using statistical multiplexing. Bharucha describes a packet layer 44 directly above a physical layer 46 and a data layer 42 above the packet layer 44. AAL2 packets are mapped directly onto physical layer 46. According to Bharucha, an ATM layer may be eliminated. Bharucha, however, does not disclose or suggest adding padding to mini-

packets when the mini-packets are encrypted to ensure each mini-packet is an integral multiple of a predetermined block size.

Schulzrinne describes a real-time transport protocol to provide N- to N- network transport functions suitable for applications or network services. Referring to Section 9.1, Schulzrinne describes padding that is indicated by a p-bit in a header field. Schulzrinne describes that the padding is to a multiple of eight octets such that the packet contains one or more additional padding octets. Padding bit p is for use with encryption algorithms. Schulzrinne, however, does not disclose or suggest adding padding to mini-packets when the mini-packets are encrypted to ensure each mini-packet is an integral multiple of a pre-determined block size.

In contrast, claim 1 recites “adding padding to mini-packets when the mini-packets are encrypted to insure each mini-packet is an integral multiple of a predetermined block size.” Claim 10 recites the controller . . . adding padding to mini-packets when the mini-packets are encrypted to insure each mini-packet is an integral multiple of a predetermined block size.” Claim 19 recites subject matter similar to claim 1. Applicants submit that neither Bharucha nor Schulzrinne, either alone or in combination, discloses at least these features of the presently pending claims.

Schulzrinne’s padding octets do not disclose or suggest the number of padding bits for an encrypted block is an integral multiple of a predetermined block size. Schulzrinne describes padding to a multiple of eight octets. Applicants submit that the padding of Schulzrinne is added as octets, and not according to a predetermined block

size. The present invention, on the other hand, clearly recites each mini-packet is an integral multiple of a predetermined block size.

In view of the above, applicants respectfully submit that claims 1, 10 and 19 each recite subject matter that is neither disclosed nor suggested by the combination of Bharucha and Schulzrinne.

Claims 5, 9, 14-18 and 23-27 were rejected under 35 U.S.C. § 103(a) allegedly being unpatentable over Bharucha and Schulzrinne as applied to claims 1, 10 and 19, and further in view of “The swIPe Security Protocol” (Ioannidis). The Office Action concedes that Bharucha and Schulzrinne “do not explicitly disclose adding an authenticator to each data packet.” The Office Action then alleges that Ioannidis “teaches adding [an] authenticator to each data packet” Applicants submit that Ioannidis does not disclose or suggest the features, as discussed above, missing from Bharucha and Schulzrinne.

Ioannidis describes a network – layer security protocol for an IP protocol suite. Ioannidis states that “swIPe is concerned only with security mechanisms; policy and key management are handled outside the protocol.” Ioannidis describes encapsulating each IP datagram to be secured inside a swIPe packet. A swIPe packet starts with a header, which contains identifying data and authentication information. The header is followed by the original IP datagram, which in turn is followed by any padding required by the security processing. Ioannidis, however, does not disclose or suggest adding padding to

mini-packets are encrypted to ensure each mini-packet is an integral multiple of a predetermined block size.

In contrast, as discussed above, the present invention recites adding padding to mini-packets when the mini-packets are encrypted to ensure each mini-packet is an integral multiple of predetermined block size. Ioannidis does not disclose or suggest adding padding that is an integral multiple of a predetermined block size. Ioannidis, at most, describes adding padding required by security processing. Applicants submit that this aspect of Ioannidis does not disclose or suggest at least this feature of the presently pending claims missing from Bharucha and Schulzrinne.

Further, claims 5-9, 14-18 and 23-27 depend from independent claims 1, 10 and 19, respectively. As noted above, independent claims 1, 10 and 19 are not obvious. If an independent claim is not obvious, and any claim depending therefrom also is not obvious. MPEP 2143.03. Therefore, for at least these reasons, applicants submit that claims 5-9, 14-18 and 23-27 are not rendered obvious by the cited references.

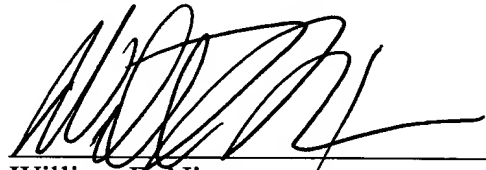
In view of the above, applicants respectfully request that the Examiner withdraw the obviousness rejection to claims 1, 5-10, 14-19 and 23-27. Applicants also submit new claims 28-30 are allowable for at least the reasons given above. It is therefore respectfully requested that all of claims 1-30 be allowed, and this application pass to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'W. F. Nixon', written over a horizontal line.

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Enclosures: Additional Claim Fee Transmittal